View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by Repositório Científico do Instituto Politécnico do Porto

Social representation of "music" in young adults: a cross-cultural study

Vinaya Manchaiah[1,2,3], Fei Zhao[4,5], Stephen Widén[6], Jasmin Auzenne[1], Eldré W. Beukes[7], Tayebeh Ahmadi[8], David Tomé[9], Deepthi Mahadeva[10], Rajalakshmi Krishna[3,11] & Per Germundsson[12]

[1]Department of Speech and Hearing Sciences, Lamar University, Beaumont, TX, USA, [2]Department of Behavioural Sciences and Learning, The Swedish Institute for Disability Research, Linköping University, Linköping, Sweden, [3]Audiology India, Mysore, Karnataka, India, [4]Centre for Speech Language Therapy and Hearing Science, Cardiff Metropolitan University, Cardiff, Wales, UK, [5]Department of Hearing and Speech Science, Xinhua College, Sun Yat-sen University, Guangzhou, China, [6]The Swedish Institute for Disability Research, Örebro University, Örebro, Sweden, [7]Department of Vision and Hearing Sciences, Anglia Ruskin University, Cambridge, UK, [8]Department of Audiology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran, [9]Department of Audiology, School of Allied Health Sciences, Polytechnic Institute of Porto, Vila Nova de Gaia, Portugal, [10]St. John's Medical College, Bangalore, Karnataka, India, [11]All India Institute of Speech and Hearing, University of Mysore, Mysore, India, and [12]The Department of Health and Welfare Studies, Malmö University, Malmö, Sweden

Abstract

Objective: This study was aimed to explore perceptions of and reactions to music in young adults (18–25 years) using the theory of social representations (TSR). *Design*: The study used a cross-sectional survey design and included participants from India, Iran, Portugal, USA and UK. Data were analysed using various qualitative and quantitative methods. *Study sample*: The study sample included 534 young adults. *Results*: The Chi-square analysis showed significant differences between the countries regarding the informants' perception of music. The most positive connotations about music were found in the responses obtained from Iranian participants (82.2%), followed by Portuguese participants (80.6%), while the most negative connotations about music were found in the responses obtained from Indian participants (18.2%), followed by Iranian participants (7.3%). The participants' responses fell into 19 main categories based on their meaning; however, not all categories were found in all five countries. The co-occurrence analysis results generally indicate that the category ''*positive emotions or actions''* was the most frequent category occurring in all five countries. *Conclusions*: The results indicate that music is generally considered to bring positive emotions for people within these societies, although a small percentage of responses indicate some negative consequences of music.

Key Words: Music listening; hearing loss; public health hazard; attitude; social representation; text mining; cross-culture

Introduction

Music, according to the New National Dictionary, means ''*art of combining sounds or sequences of notes into harmonious patterns pleasing to the ear and satisfying to the emotions; melody*'' (Sheriff, 2014). Listening to music at home, or in certain events, or in social settings is an important part of people's everyday lives. Because of musical features, music can carry various information and convey precise expression to listeners, which may affect people's emotions and experiences. Music can be remarkably complex in terms of its frequency spectrum, ranging from frequencies of 20 Hz to about 10 kHz (Chasin & Russo, 2004). More specifically, the frequency range produced by a double bass runs from 50 to 2000 Hz, and from 200 Hz to about 10 kHz for a violin (Cai et al, 2013). These sounds can be produced by the voice or by various kinds of musical instruments with their subtle acoustic characteristics in rhythmic, melodious and harmonious form, and subsequently music can be perceived accurately by listeners so as to express thought or feeling and affect emotions (Chasin & Russo, 2004).

Music perception is the process of achieving awareness or understanding of music by organising and interpreting the features of music (Cai et al, 2013). Evidence has shown that music inspires sensations in the brain by giving pleasure, emotion, and sometimes easing off stress. For example, Juslin (2013) suggested emotions are highly correlated with musical expressions, depending on the precise process through which the emotional contents in music are

transmitted and perceived by listeners. Moreover, music can provide subtle meanings, which can have positive effects on many individual lives. However, people may interpret the meaning of a musical piece differently, no matter how the music is played (whether in the way in which the composer or performer intends or intended to express the music, or in a different fashion altogether). Although music can bridge cultures in a universal experience and perception that is beyond intellect or reason, a number of possible common factors appear to be important in influencing music experience, perception, and interpretation, such as age, gender, education, geographical factors, cultural context, religious and social influence. For example, geographical diversity affects the nature and form of the music that strongly reflects the influence of regional characteristics and styles in music. Moreover, music is affected by religious factors when it is performed or composed for religious use or through religious influence. For example, Islamic music has its indigenous musical styles, which is sung or played in public services or private devotions.

The stratification of any given society may also affect the form and style of the music people prefer, i.e. individuals' real preferences in music is most likely relevant to the different dimensions of social stratification, which has a certain degree of influence on people's music preference as well as towards music-related behaviour (Dolan & Sharot, 2011). Such relationships between social structure and distinctions of music appear to be the result of the interaction between cultural traditions and genres of music experience and perception (Feld, 1984). Therefore, music experience and perception should be considered within cultural context, associated with its own history, invention, identity and belonging.

Over the last decade, the literature has demonstrated that music listening has become a significant public health hazard, especially in adolescents and young adults. Listening to loud music (or noise) can result in various hearing disorders (Zhao et al, 2010; Jiang et al, 2016). However, as the effects of noise or music is related to both the intensity and duration, even moderate levels of music listening for longer durations can result in various hearing disorders (NIOSH, 1998). Although people are wary of adverse effects of loud music listening, music is generally considered as a positive aspect of life in most cultures. Hence, it is essential to understand the perception of young adults from different cultural backgrounds in order to explore the influence of cultural, regional and socioeconomic factors related to attitudes and behaviours towards music listening (Zhao et al, 2011).

In this study, the theory of social representation (TSR) is used to explore the attitudes and perception of young adults towards music listening. According to the TSR, social representation is conceived as a social process of communication and discourse, in the course of which meanings and social objects are generated and elaborated (Allansdottir et al, 1993). In the meanwhile, the concept of social representation is seen as individual attributes (e.g. knowledge, character and behaviour), which are shared with other people in a group or society. Therefore, social representation can be viewed as ''*a system of values, ideas, and practices with a twofold function,*'' mainly focusing on common knowledge and the processes whereby sociocultural, historical and group-specific forces become sedimented in inner experiences (Joffe, 2003, p. 46).

The TSR has been well developed and applied in various research studies, particularly in the fields of psychology and sociology. Recently growing literature has shown important outcomes in association with attitudes towards hearing loss using the TSR (Manchaiah et al, 2015a; Zhao et al, 2015). For example, in the studies by Manchaiah et al (2015a; 2015b,), the TSR has been applied to create understanding of the social representation for *hearing loss* and *hearing aids* in the general public. The study on social representation on hearing loss suggested that the most frequently occurring categories were: assessment and management; causes of hearing loss; communication difficulties; disability; hearing ability or disability; hearing instruments; negative mental state; the attitudes of others; and sound and acoustics of the environment (Manchaiah et al, 2015a). Also, participants in India reported significantly more positive and fewer negative associations when compared to participants from Iran, Portugal and UK (Manchaiah et al, 2015a). The most frequently occurring categories in the social representation of hearing aids (Manchaiah et al, 2015b) included: disability and aging; appearance and design; cost; hearing instruments; and improved hearing and communication. There was no statistically significant difference among positive, neutral or negative connotations reported in different countries (Manchaiah et al, 2015b). These findings provide useful insights into the public perception of hearing loss that may prove useful in public education and counselling.

The aim of this study was to explore the social representation of ''music'' in India, Iran, Portugal, UK and USA, which would be helpful for better understanding of attitudes and behaviours towards music listening in the different cultural situations of these countries. Subsequently, this study could provide important information on developing ''health behavior change'' and an education programme for young adults to initiate healthy music listening habits. In addition, the results derived from this study would be relevant for music therapy theory and its applications in the field of clinical audiology (such as tinnitus intervention).

Method

Ethical considerations

Ethical approval was obtained for each country from local institutional ethical boards, which include: *All India Institute of Speech and Hearing*, Mysore, India; *Department of Audiology, University of Social Welfare and Rehabilitation Sciences*, Tehran, Iran; *School of Allied Health Sciences, Polytechnic Institute of Porto*, Porto, Portugal; *Research Ethics Committee, Anglia Ruskin University*, Cambridge, UK; and *Institutional Review Board*, Lamar University, Beaumont, USA.

Study design and participants

Five countries were included in the study, which had a cross-sectional design. The countries (India, Iran, Portugal, UK and USA) differ in language, culture and economy (see Table 1). Data were gathered using convenience sampling, and the respondents ($n = 534$) were young adults (see Table 2).

Data collection

A questionnaire was used for data collection (see Appendix). In each country, researchers approached young adults via universities and city centre shopping malls, requesting them to take part in the study. All those who were interested in participating received detailed information about the study and had the opportunity to ask questions. Those who agreed to participate completed the questionnaires and return of the questionnaire was taken as consent.

Table 1. Population details in India, Iran, Portugal, UK and USA.

Country	*India*	*Iran*	*Portugal*	*UK*	*USA*
Population (in millions)	1210	77	11	64	320
Continent	Asia	Asia	Europe	Europe	North America
City where data were collected	Mysore	Tehran	Porto	Cambridge	Beaumont
Population in city where data were collected (in millions)	1	8.3	1.3	0.13	0.11
National language	Hindi	Farsi	Portuguese	English	English
Language of local places	Kannada	Farsi	Portuguese	English	English

Table 2. Demographic details.

	All countries (n = 534)	*India (n = 110)*	*Iran (n = 100)*	*Portugal (n = 101)*	*UK (n = 122)*	*USA (n = 101)*
Age in years Mean ± SD (range)	21.04 ± 2.5 (18–25)	21.05 ± 2.2 (18–25)	22.24 ± 2.6 (18–25)	19.72 ± 1.8 (18–25)	22.02 ± 2.6 (18–25)	19.99 ± 1.8 (18–25)
Gender (% female)	56.6	50	53	63.4	61.5	54.5
Education (%)						
• Compulsory	27.5	0	52	0	0	94.1
• Secondary	62.2	72.7	48	96	82.8	5.9
• Tertiary	10.3	27.3	0	4	17.2	0
Profession (%)						
• Non-manual	18.2	23.6	25	3	32	4
• Manual	0.7	0	3	0	0.8	0
• Student	81.1	76.4	72	97	67.2	96
Music listening in hours in a week Mean ± SD (range)	14.47 ± 19.7 (0–75)	2.68 ± 1.5 (0–17)	14.08 ± 12.2 (2–68)	12.45 ± 12.8 (2–72)	17.93 ± 16.6 (1–70)	25.52 ± 33.5 (2–75)
Play music (yes in %)	21.9	18.2	35	15.8	37.7	Data not available

Participation in the study was voluntary and questionnaire completion anonymous as the participants did not provide any personal information that would compromise their identity. There was no compensation provided to participants.

The questionnaire required participants to report up to five words or phrases that immediately come to mind while thinking about ''*music*'' by writing them in the questionnaire. They were also asked to indicate whether each word or phrase they reported had positive, neutral or negative connotations. Similar data was also collected for ''*loud music,*'' which has been presented elsewhere (Manchaiah et al, unpublished). In addition, within the beginning of the questionnaire, the respondents were asked to provide some demographic information (e.g. gender, age, education and profession).

This free association method has been used in several studies to access and analyse the semantic content of social representations (Danermark et al, 2014; Linton et al, 2013; Manchaiah et al, 2015a, 2015b). A word or short phrase (in this case *music*) is used to prompt associations. The spontaneous response is considered more effective in providing a better opportunity to investigate the semantic universe of the expression rather than a well thought-out response (Abric, 1994). Originally, the questionnaire was developed in English. This version was used in UK and USA. A well-accepted forward and back-translation method was used (Beaton et al, 2000) to translate the questionnaire into Kannada (India), Farsi (Iran) and Portuguese (Portugal).

Data analysis

Data was analysed using both qualitative and quantitative methods in three main steps. These include: (1) categorisation of associations; (2) co-occurrence analysis (based on text-mining technique); and (3) Chi-square analysis.

First, a qualitative content analysis was carried out in order to identify and group words and phrases into categories that have a similar meaning (Graneheim & Lundman, 2004). For example, responses such as motivation, relaxing and happy fell into the category ''positive emotions or actions''. Responses such as ear pain, deafness, ringing in the ear, etc. fell into the category ''ear and hearing problems''. Another researcher checked content analysis and any ambiguity was resolved through discussion.

In the second step, a co-occurrence analysis was performed (also known as similarities analysis), which is based on the mathematical graph theory and involves studying the frequencies of each category and inter-relations between the different categories (Flament, 1965). The co-occurrence analysis was done using the Iramuteq software program (Toulouse, France), which is an R-interface for multidimensional analysis of texts and surveys (Ratinaud & Marchand, 2012; R Development Core Team, 2016). This software produces an index called a ''maximum tree''. The size of the nodes (represented as circles in the tree) indicates the frequency of the categories; a bigger node indicates higher frequency. The lines connecting the nodes show inter-category associations. In the maximum tree, only the strongest links are retained, and the number on each line depicts the frequency of individuals associating with both categories. For example, in Figure 1 the categories ''positive emotions or actions'' and ''form of escape'' are connected with 15 individuals who mentioned both categories when they thought about music. Hence, this maximum tree index provides an overall description of the data in terms of main categories and their associations.

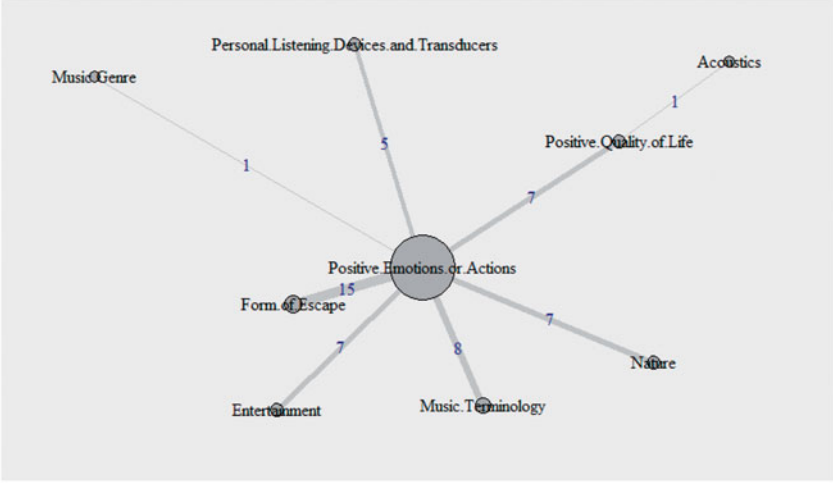

Figure 1. Co-occurrence analysis index for India, showing main categories related to music perception and their associations ($N = 110$).

The third step involved a Chi-square analysis to identify possible differences between the countries regarding reported positive, neutral and negative connotations. The positive, negative and neutral connotations reported by the respondents were counted and a single Chi-square analysis (with a 3×5 cross tab for connotations vs. countries) was performed.

Results

Participants' demographics

Table 2 provides demographic details of the study participants. The average age of participants ranged between 19 and 21 years in all countries with a fairly equal spread of males and females. Some differences were noticed in terms of education, profession and music listening habits. Participants in India, Portugal and UK had a higher frequency of secondary education, whereas participants in USA had a lower frequency in secondary and post-secondary education. Iranian participants had an equal spread of compulsory and secondary education and none from post-secondary education. Generally, there were relatively fewer (i.e., below 20%) participants working (non-manual or manual jobs) and more students (i.e., around 80%) from all countries. Music listening hours varied considerably among countries, with Indian participants having the lowest mean of about 2.68 h a week; participants from USA having the highest mean of about 25.52 h a week; and the participants from the other three countries having the mean listening hours from 12 to 18 h a week.

Positive, neutral and negative connotations

Significant differences between the countries were found ($\chi^2 = 141.53$; df $= 8$; $p < 0.001$) for positive, neutral and negative connotations. Most positive connotations about music were found in the responses obtained from Iranian participants (82.2%), followed by Portuguese participants (80.6%), while most negative connotations about music were found in the responses obtained from Indian participants (18.2%), followed by Iranian participants (7.3%). The frequencies and percentages are presented in Table 3.

Table 3. Frequencies and percentages regarding positive, neutral and negative connotations distributed by country.

	Positive		*Neutral*		*Negative*	
	n	%	*n*	%	*n*	%
India	337	61.3	113	20.5	100	18.2
Iran	407	82.2	52	10.5	36	7.3
Portugal	407	80.6	70	13.9	28	5.5
UK	472	77.4	94	15.4	44	7.2
USA	367	72.7	122	24.2	16	3.1

Response categories

The participants' responses fell into 18 main categories based on their meaning (see Table 4). However, not all categories were found in all five countries, with some similarities and differences among these countries. ''*Positive emotions or actions*'' were the most frequently occurring category in all five countries. Other most frequently occurring categories in all countries included: form of escape, music genre, music terminology and musical instruments. ''*Negative emotions or actions*'' category was also reported in all countries except in India, although much less frequently. Moreover, many reported categories reflected both positive and negative connotations (e.g. form of escape category was seen as positive in that it offers freedom whereas some people consider it negatively as it can be viewed as creating distraction).

Social representation based on co-occurrence analysis

The co-occurrence analyses of categories associated with music are presented as an index (see Figures 1–6). Here the size of the nodes represent the frequency of each category, and the thickness of the lines (or the number on the line) connecting the nodes represent the extent to which the categories are related based on the responses of the study sample.

Figure 1 represents the co-occurrence analysis for India, which has one main node representing ''*positive emotions or actions.*''

Table 4. Frequency (percentage) of categories reported among different countries for music.

		Number of responses (% responses)					
No	*Categories*	*India*	*Iran*	*Portugal*	*UK*	*USA*	*All countries*
1	Acoustics (e.g.: sound, decibel, noise, loudness and intensity)	1 (0.2)	3 (0.7)	23 (4.8)	38 (6.3)	42 (8.4)	107 (4.1)
2	Body structure (e.g.: ear and vocal cords)	–	–	13 (2.7)	–	–	13 (0.5)
3	Entertainment (e.g.: MTV and radio)	7 (1.3)	12 (2.5)	9 (1.9)	18 (3)	20 (4)	66 (2.5)
4	Form of escape (e.g.: freedom, distraction, isolation and dream)	15 (2.8)	19 (3.9)	16 (3.4)	8 (1.4)	6 (1.2)	64 (2.5)
5	Friends and family (e.g.: neighbours, friends and family)	–	8 (1.7)	13 (2.7)	15 (2.5)	3 (0.6)	39 (1.5)
6	Location (e.g.: festivals, work, concerts and bar)	–	19 (3.9)	19 (4)	17 (2.8)	11 (2.2)	66 (2.5)
7	Memories (e.g.: moments and nostalgia)	–	15 (3.1)	12 (2.5)	8 (1.4)	1 (0.2)	36 (1.4)
8	Music genre (e.g.: disco, jazz, rock and heavy metal)	1 (0.2)	7 (1.5)	–	27 (4.5)	42 (8.4)	77 (3)
9	Music terminology (e.g.: rhythm, melody, music and song)	8 (1.5)	22 (4.5)	40 (8.3)	82 (13.5)	78 (15.5)	230 (8.8)
10	Musical artists, groups or bands (e.g.: specific artist name and band)	–	14 (2.9)	38 (7.9)	26 (4.3)	26 (5.2)	104 (4)
11	Musical instruments (e.g.: piano, flute and guitar)	–	36 (7.3)	41 (8.6)	29 (4.8)	10 (2)	116 (4.4)
12	Nature (e.g.: sea, mountains, rain, etc.)	7 (1.3)	17 (3.5)	–	–	3 (0.6)	27 (1.1)
13	Negative emotions or actions (e.g.: sadness, discomfort, unpleasant sensations, confusion and irritation)	–	39 (7.9)	17 (3.6)	24 (4)	6 (1.2)	86 (3.3)
14	Party and alcohol (e.g.: nightlife, DJ, drunk and night)	–	7 (1.5)	21 (4.4)	15 (2.5)	6 (1.2)	49 (1.9)
15	Personal listening devices and transducers (e.g.: earphones, phones, mp3 and speakers)	5 (1)	5 (1.01)	19 (4)	12 (2)	10 (2)	51 (2)
16	Positive quality of life (e.g.: wellness, well-being and life quality)	7 (1.3)	–	9 (1.9)	–	–	14 (0.6)
17	Positive emotions or actions (e.g.: joy, happiness, singing, dancing and fun)	499 (90.8)	256 (51.8)	191 (39.63)	289 (47.4)	238 (47.2)	1473 (55.8)
18	Religion and spirituality (e.g.: spirit and God)	–	16 (3.3)	1 (0.3)	2 (0.4)	3 (0.6)	22 (0.9)

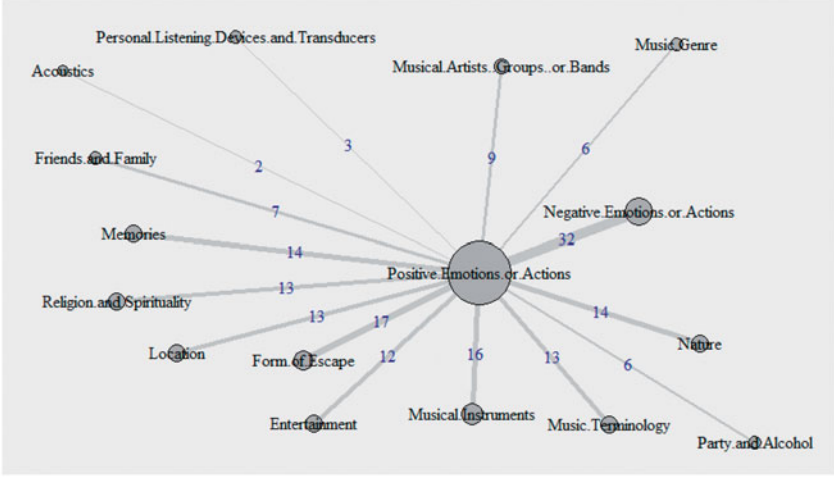

Figure 2. Co-occurrence analysis index for Iran, showing main categories related to music perception and their associations ($N = 100$).

Responses for the other categories (e.g. form of escape, positive quality of life and music technology) are relatively limited. Figure 2 represents the co-occurrence analysis for Iran, which indicates two main nodes for categories ''*positive emotions or actions*'' and ''*negative emotions or actions*''. These two categories are connected with a thick line indicating that of all the participants who motioned positive emotions and actions, 34 participants also mentioned negative emotions or actions. Figure 3 represents the co-occurrence analysis for Portugal, which is slightly different when compared to India and Iran. Here, the co-occurrence analysis indicates main nodes for categories ''*positive emotions or actions*''; however, also less frequent but equally important categories included ''*negative emotions or actions,*'' *''music terminology,''* and *''music artist, groups or bands.''* Both UK and USA had similar patterns in terms of co-occurrence analysis (see Figures 4 and 5), which indicate main nodes for categories ''*positive emotions or actions,*'' ''*music genre,*'' *''music terminology,''* and *''acoustics.''*

Comparison of co-occurrence analysis graphs across countries reveals some interesting observations. The category ''*positive emotions or actions*'' had an inter-category association with most

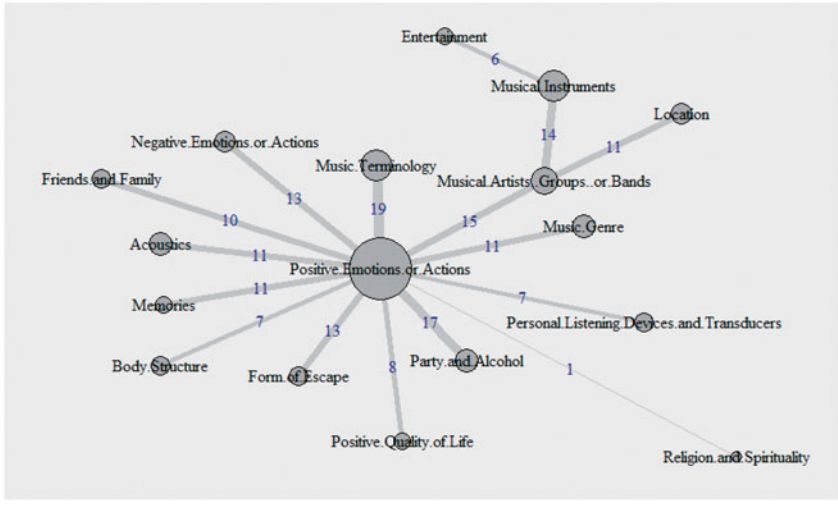

Figure 3. Co-occurrence analysis index for Portugal, showing main categories related to music perception and their associations ($N = 101$).

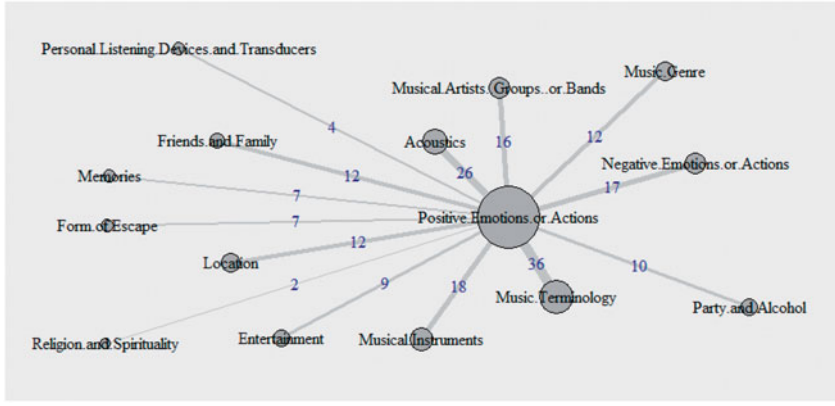

Figure 4. Co-occurrence analysis index for UK, showing main categories related to music perception and their associations ($N = 122$).

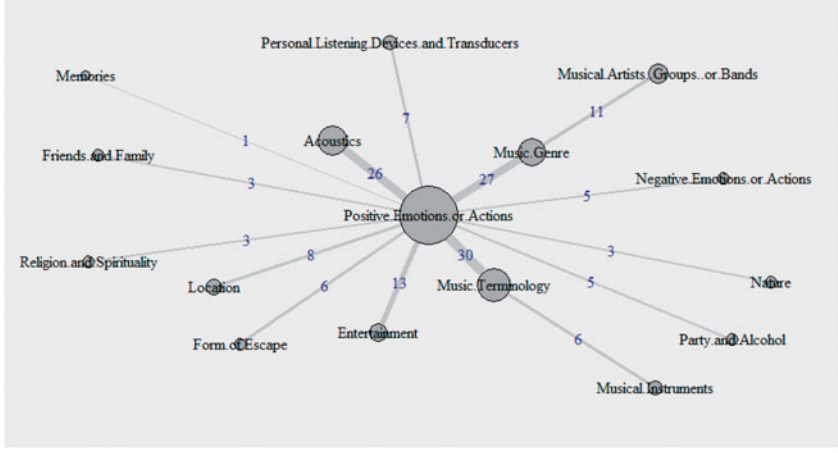

Figure 5. Co-occurrence analysis index for USA, showing main categories related to music perception and their associations ($N = 101$).

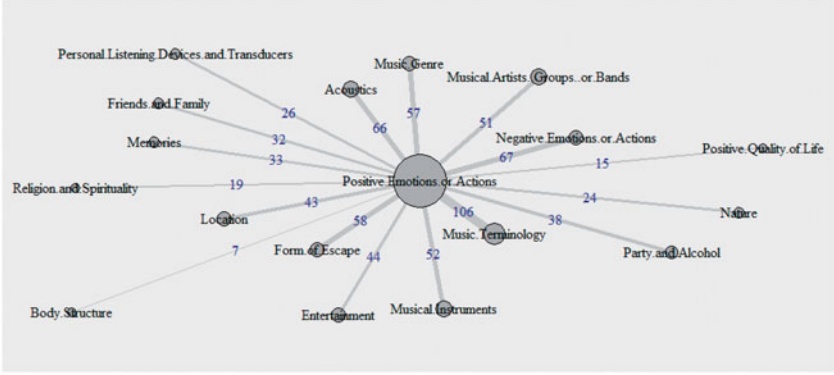

Figure 6. Global co-occurrence analysis index, showing main categories related to music perception and their associations ($N = 534$).

of the other categories in all five countries (indicated by connecting lines). However, very few inter-category associations were observed among other categories. Categories such as ''*party and alcohol*'' and ''*religion and spirituality*'' are present in all countries except India, which may indicate some skewed responses from this sample. The category ''*body structure*'' was only identified by responses of participants in Portugal.

Figure 6 represents the global (all countries) co-occurrence analysis, which has a similar structure and observations as the other countries, indicating that many of the responses across countries are similar, although some differences can be noted.

Discussion

This study explored the social representation of ''music'' in India, Iran, Portugal, UK and USA. The content analysis revealed 18 main categories from all participants' responses, although not all categories were found in all five countries. Overall, the results indicate that music is generally considered to bring positive emotions for people within these societies, although a small percentage of responses indicate some negative consequences of music. Further Chi-square analysis indicated significant association between the countries regarding positive, neutral and negative connotations, i.e. most positive connotations about music were found in the responses obtained from Iranian participants, followed by Portuguese participants, whereas the most negative connotations about music were found in the responses obtained from Indian participants, followed by Iranian participants. The results imply that there exist some cultural differences between the countries in the participants' perceptions about music, but also some similarities. In addition, it is also evident that there are some influences of religion and spirituality in relation to the social representation of music. For example, Iran is a country with strong Islamic roots. In Islamic religion, it is common to use music for gatherings of melodious remembrance of Allah and His Messenger, whereas the other cultures seem to attach less importance to liturgical music. This is evident from the study results where participants from Iran have a higher frequency of responses in the category ''religion and spirituality.''

Although some differences were observed among the countries, the category ''*positive emotions or actions*'' stands out as the biggest factor in relation to music in all five countries, indicating that this phenomenon is universal. Responses for other categories were relatively limited. Other frequently occurring categories were: *form of escape*, *music genre*, *music terminology* and *musical instruments*. The category ''*negative emotions or actions*'' was also reported frequently in all countries except in India. Researchers suggest that people value music primarily because of the emotion it evokes (Juslin & Vastfjall, 2008). In this study, it is clear that irrespective of culture and country, the participants perceive music as something that induces emotions, especially positive emotions and actions. The distinction between responses for ''positive emotions or actions'' and ''negative emotions or actions'' was based on consideration of the meaning of the words or phrase reported, and also upon considering the connotations associated with that particular response. For example, responses such as motivation and relaxing possessed a positive meaning and also had positive connotations; hence, the responses belonged to the category ''positive emotions or actions.'' On the other hand, responses such as distracting and annoying carried a negative meaning and were associated with negative connotations; hence, they belonged to the category ''negative emotions or actions.''

It is noteworthy that none of the participants reported ear and hearing problems such as tinnitus and hearing loss due to music exposure, even though some reported that music was associated with negative emotions such as that it could be unpleasant and uncomfortable. In a recent parallel study on the perception of young adults towards ''loud music,'' the results suggest that the two largest factors that emerged were ''*positive emotions and action*'' and ''*negative emotions and actions*'' (Manchaiah et al, unpublished). In that study ''*ear and hearing problems*'' was also one of the most frequently occurring category for loud music. These results indicate that most young adults are aware that loud music listening can have equally higher positive and negative consequences. Hence, significant outcomes of studying their perception towards music may provide helpful information on developing ''health behavior change'' and education programs for young adults (Zhao et al., 2010; Jiang et al., 2016). In addition, the results derived from this study will be useful for better understanding of music therapy theory and its applications in the field of clinical audiology (e.g. tinnitus intervention).

Methodological considerations and limitations

In this study we have collected data from five different countries in order to understand cultural differences and similarities in young adults' perceptions towards music exposure. However, there are some methodological limitations to be considered. Factors such as gender and socio-economic status have previously been found to influence attitudes towards exposure to loud music and the use of hearing protection. In this study, factors such as gender and socio-economic status have not been analysed. The differences in music listening hours between the countries were found. Participants from India reported the lowest listening mean of 2.68 h a week, whereas participants from USA reported the highest mean of about 25.52 h a week. The participants from the other three countries reported listening between 12 and 18 h a week. It is difficult to know if these differences are due to cultural differences between the countries, or due to sampling. Hence more research on larger samples is needed in order to clarify if these differences are caused by cultural differences or not. These differences in listening habits may have affected the result. Furthermore, the participants were recruited by using a convenience sampling, which may have introduced some bias. However, the responses give rise to a central node on ''*positive emotions or actions,*'' which indicate a certain level of coherence within as well as across countries.

Conclusions

The results derived from this study indicate that music is generally considered to bring positive emotions for people within these societies, although a small percentage of responses indicate some negative consequences of music listening. Significant differences between the countries regarding positive, neutral and negative connotations imply that there are some cultural differences between the countries in the participants' perception about music. Hence, this study results may provide helpful information towards understanding the influence of positive perception on behavior change towards music while developing interventions to improve healthy listening habits.

References

Abric, J.C. 1994. *Pratiques Sociales et Representations:Fourth édition*. Paris: PUF.

Allansdottir, A., Jovchelovitch, S. & Statopoulou, A. 1993. Social representations: The versatility of a concept. *Pap Soc Represent*, 2, 3–10.

Beaton, D.E., Bombardier, C., Guillemin, F. & Ferraz, M.B. 2000. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine (Phila Pa 1976)*, 25, 3186–3191.

Cai, Y.X., Zhao, F. & Zheng, Y.Q. 2013. Mechanisms of music perception and its changes in hearing impaired people. *Audiol Med*, 11, 168–175.

Chasin, M. & Russo, F.A. 2004. Hearing aids and music. *Trends Amplif*, 8, 34–47.

Danermark, B., Englund, U., Germundsson, P. & Ratinaud, P. 2014. French and Swedish teachers' social representations of social workers. *Eur J Soc Work*, 17, 491–507.

Dolan, R.J. & Sharot, T. 2011. *Neuroscience of preference and choice: cognitive and neural mechanisms*. London, UK: Academic Press.

Feld, S. 1984. Sound structure as social structure. *Ethnomusicology*, 28, 383–409.

Flament, C. 1965. *Théorie des Graphes et Structures Sociales*. Paris, France: Gauthier-Villars.

Gaskell, G. 2001. Attitude, social representations, and beyond. In: Deaux, K. & Philogène, G. (eds.) *Representations of the social*. Oxford: Blackwell.

Graneheim, U.H. & Lundman, B. 2004. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*, 24, 105–112.

Jiang, W., Zhao F., Guderley, N. & Manchaiah, V. 2016. Daily music exposure dose using personal listening devices and hearing problems in adolescents and young adults: A systematic review. *Int J Audiol*, 55, 197–205.

Joffe, H. 2003. Risk: From perception to social representation. *Br J Soc Psychol*, 42, 55–73.

Juslin, P.N. 2013. What does music express? Basic emotions and beyond. *Front Psychol*, 4, 596.

Juslin, P.N. & Vastfjall, D. 2008. Emotional responses to music: The need to consider underlying Mechanisms. *Behav Brian Sci*, 31, 559–621.

Linton, A.C., Germundsson, P., Heimann, M. & Danermark, B. 2013. Teachers' social representation of students with Aspergers diagnosis. *Eur J Spec Needs Educ*, 28, 392–412.

Manchaiah, V., Danermark, B., Ahmadi, T., Tomé, D., Rajalakshmi, K., et al. 2015a. Social representation of ''hearing loss'': Cross-cultural exploratory study in India, Iran, Portugal and the UK. *Clin Interv Aging*, 10, 1857–1872.

Manchaiah, V., Danermark, B., Vinay, Ahmadi, T., Tomé, D., et al. 2015b. Social representation of hearing aids: Cross-cultural study in India, Iran, Portugal, and the United Kingdom. *Clin Interv Aging*, 10, 1601–1615.

NIOSH. 1998. *Criteria for a recommended standard: occupational noise exposure*. DHHS (NIOSH) Publication Number 98-126. Assessed August 26, 2016: https://www.cdc.gov/niosh/docs/98-126/.

R Development Core Team. 2016. *The R Project for Statistical Computing: Vienna, Austria*. Assessed March 01, 2016: http://www.R-project.org.

Ratinaud, P. & Marchand, P. 2012. Recherche improbable d'une homogène diversité: Le débat sur l'identité nationale [Improbable search of a homogenous diversity: The debate on national identity]. *Langages*, 187, 93–107.

Sheriff, A. 2014. *Music and Its Effects*. CreateSpace Independent Publishing Platform: Germany.

Zhao, F., Manchaiah, V.K.C., French, D. & Price, S. 2010. Music exposure and hearing disorders: An overview. *Int J Audiol*, 49, 54–64.

Zhao, F., French, D., Manchaiah, V.K.C., Liang, M. & Price, S. 2011. Music exposure and hearing health education: A review of knowledge, attitude and behavior in adolescents and young adults. *Health Educ J*, 71, 709–724.

Zhao, F., Manchaiah, V., St Claire, L., Danermark, B., Jones, L., et al. 2015. Exploring the influence of culture on hearing help-seeking and hearing-aid uptake. *Int J Audiol*, 54, 435–443.

Appendix

Questionnaire

Section 1: Demographic details

Age:	*Gender:*
Maximum level of education achieved:	Profession:
How long (in hours) do you listen to music every week?:	

Section 2: Free associations about ''Music''

- *Stage 1:* Please write five words or expression that comes spontaneously to your mind when you think about the term ''music''.
- *Stage 2:* Determine if the association represents a positive (+), neutral (0) or negative (−) aspect of ''loud music'' and enter them in front of the words or expressions by ticking the relevant box.

	Connotations		
Words or expressions	*Positive*	*Neutral*	*Negative*